

ASHY STORM-PETREL (*Oceanodroma homochroa*)

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Criteria Scores

Population Trend	Range Trend	Population Size	Range Size	Endemism	Population Concentration	Threats
10	0	7.5	5	7.5	10	10

Special Concern Priority

Currently considered a Bird Species of Special Concern (breeding), Priority 2. Included on CDFG's prioritized list, priority 3.

Breeding Bird Survey Statistics for California

Data inadequate for trend assessment (Sauer et al. 2000).

General Range and Abundance

The Ashy Storm-Petrel has a highly-restricted breeding range (California endemic) and relatively small global numbers (circa 10,000 birds) compared to many other storm-petrels. Breeds on islands and offshore rocks from Mendocino County, California (circa 39° N latitude), south to Islas Los Coronados (32°28'N, 117°15'W), off NW Baja California, Mexico (Bent 1922; Grinnell and Miller 1944; Hunt et al. 1979, 1980; Ainley et al. 1974, 1990; SOWLS et al. 1980; Carter et al. 1992; Everett and Anderson 1991; Ainley 1995; McChesney et al., *in prep.*). Largest colonies occur at the South Farallon Islands, Prince Island, Santa Cruz Island, and Santa Barbara Island; breeding almost entirely endemic (>99%) to California, except for small numbers at Islas Los Coronados. They forage primarily in upwelling areas (seaward of the continental shelf, near islands, and near the coast) within the southern part of the California Current (Ainley et al. 1974, Briggs et al. 1987). In the fall and winter, some Ashy Storm-Petrels disperse further north and south from breeding colonies but most stay within the breeding range,

with large numbers (4,000-10,000) noted in Monterey Bay (Roberson 1985). They have been recorded at sea from Humboldt County to central Baja California, Mexico (Harris 1991, Ainley 1995) but are regularly recorded in large numbers in water off California only.

Seasonal Status in California

Occurs year round in waters over and just seaward of the continental slope (Ainley 1995). Some adults attend breeding colonies year round (Ainley et al. 1974, 1990; Carter et al. 1992). Egg laying occurs from mid-March to late October (peaks in June); chicks hatch from early May to mid-October and fledge from late July to January (James-Veitch 1970; Hunt et al. 1979; Ainley et al. 1974, 1990; Carter et al. 1992; McIver 2002).

Historical Range and Abundance in California

Little data are available on historical changes in breeding numbers or distribution. Grinnell and Miller (1944) described Ashy Storm-Petrels as “fairly common in spring and summer, at least locally” with breeding reported at the Farallon Islands, San Miguel Island, and Santa Cruz Island. No major changes in numbers reported at the South Farallon Islands were apparent between the mid-1880’s and the early 1970’s (Ainley 1995). However, breeding habitats were changed substantially in the 1850’s to 1870’s by the construction of a lighthouse, buildings, and paths, often using island rocks to form walls, and severe trampling of island habitats by eggers during harvest of Common Murre (*Uria aalge*) eggs (Ainley and Lewis 1974, Ainley et al. 1990, White 1995, Carter et al. 2001). By the 1880s and 1890s, Ashy Storm-Petrels were reported breeding in natural cavities under rocks, as well as in constructed rock walls (Taylor 1887, Bryant 1888, Blankenship and Keeler 1892, Loomis 1896). In 1911, Dawson (1911, 1923) noted extensive use of rock walls and that numbers of Ashy Storm-Petrels had either increased or been previously underestimated. Initial rock wall construction likely reduced available habitat

and caused birds to change their breeding distribution on the island. However, the many sturdy rock walls provided protection for remaining breeding sites from collapse due to trampling by humans and introduced animals. Numbers of breeding Ashy Storm-Petrels likely were reduced to some degree by the 1880s at the South Farallon Islands.

At Anacapa Island, Black Rats (*Rattus rattus*) were introduced to the island in the mid to late 19th century and small seabirds, such as Ashy Storm-Petrels and Xantus's Murrelets (*Synthliboramphus hypoleucus*) were either severely reduced or extirpated (McChesney et al. 2000a, Hamer and Carter 2002). Small numbers of Ashy Storm-Petrels were captured in mist nets at Anacapa Island in 1994-95, indicating that small numbers likely still breed in inaccessible habitats (McChesney et al., *in prep.*). Introduced cats (*Felis catus*) at Santa Barbara Island and Islas Los Coronados also may have affected breeding Ashy Storm-Petrels in the past but cats were removed in the 1970's and 1980's (McChesney and Tershy 1998). Prince Island was previously used for bombing and target practice by the U. S. Navy which may have resulted in reduction in breeding habitat.

Recent Range and Abundance in California

Since 1975, Ashy Storm-Petrels have been confirmed to breed or visit breeding habitats at: Mendocino Co. (Van Damme Rock); Marin Co. (Bird Rock, Chimney Rock, and Double Point Rocks); San Francisco Co. (South Farallon Islands); San Mateo Co. (San Pedro Rock); Monterey Co. (Bench Mark –227x, Castle Rocks and Mainland, and Hurricane Point Rocks); Santa Barbara Co. (Castle Rock, Prince Island, San Miguel Island [Harris Point to Cuyler Harbor], Santa Cruz Island [Shipwreck Cave, Dry Sandy Beach Cave, Cave of the Bird's Eggs, Diablo Rocks, Orizaba Rock, Bat Cave, Cavern Point Cove Caves, Scorpion Rocks, and Willows Anchorage Rocks], Gull, Santa Barbara, and Sutil islands); Ventura Co. (Anacapa Island); Los

Angeles Co. (San Clemente and Santa Catalina Islands); and Islas Los Coronados, Mexico (Hunt et al. 1980; Sowls et al. 1980; Everett and Anderson 1991; Carter et al. 1992, 1996; Ainley 1995; McChesney et al. 2000a,b, *in prep.*; McIver 2002; Whitworth et al., *in prep.*; M.W. Parker, personal communication).

Sowls et al. (1980) estimated 5,187 breeding birds for California, with 4,000 (77%) estimated at the South Farallon Islands in 1971-72 (Ainley and Lewis 1974) and most of the remainder in the Channel Islands in 1975-77 (Hunt et al. 1979, 1980). Carter et al. (1992) estimated 7,209 birds for California, reflecting higher 1991 estimates at Channel Islands colonies but still using 4,000 estimated birds (55%) for the South Farallon Islands. Ainley (1995) estimated the world breeding population to be roughly about 10,000 birds, with added numbers for recent colony discoveries in the Channel Islands in 1994 (McChesney et al., *in prep.*). Given larger numbers in the Channel Islands (still incompletely surveyed) plus substantial decline at the South Farallon Islands, most of the small world population now appears to breed in the Channel Islands.

Trend data are available only for the South Farallon Islands, based on mist-net captures. Between 1971-72 and 1992, a large decline (circa 30-40%) in the numbers of birds captured occurred and was attributed mainly to heightened levels of depredation by Western Gulls (*Larus occidentalis*) and Burrowing Owls (*Athene cunicularia*) (Sydeman et al. 1998). Large numbers of gulls (circa 20,000-25,000) breed at the South Farallon Islands and their breeding distribution had recovered from former human decimation to cover most storm-petrel breeding habitats on Southeast Farallon Island by the early 1980's (Penniman et al. 1990). Owls do not breed there but arrive and spend long periods at the islands before dying or returning to the mainland.

Trend data are not yet available for most other colonies because standardized monitoring techniques have not been employed. Several locations at Santa Cruz Island have been carefully monitored since 1994 but most have not shown great decline or increase (McIver 2002; Carter and McIver, unpubl. data). Numbers at Orizaba Rock have declined since 1995, possibly due to heightened depredation by gulls and owls that might be related to colony illumination due to squid boat lights which was first noted in August 1995 (Carter and McIver, unpubl. data). Ashy Storm-Petrels bred historically at Painted Cave (Santa Cruz Island) but no breeding sites could be found during site searches in 1991 and 1994 (Carter et al. 1992; McChesney et al., *in prep.*). No breeding petrels were found at Santa Catalina Island in 1994-96, although past breeding was based on one egg record, and several rocks with little available breeding habitat are visited by storm-petrels based on smell (McChesney et al., *in prep.*). All other known breeding areas still are used, although little effort has been spent on documenting recent breeding or occurrence in Mendocino County during major surveys in 1979-80 or 1989 and past breeding is based only on two egg records (Sowls et al. 1980; Carter et al. 1992; McChesney et al., *in prep.*). Recent survey efforts in Monterey and Marin Counties have resulted in the discovery of small colonies that likely were missed during earlier major surveys (McChesney et al. 2000b; Whitworth et al., *in prep.*). Low breeding success due to eggshell thinning from contaminants (documented at Santa Cruz Island in the 1990's) also may be contributing to slow decline at Channel Islands colonies (Fry 1994; Kiff 1994; McIver 2002; Welsh et al. 2001, unpubl. data; Carter et al., *in prep.*). Eggshell thinning also was shown at the South Farallon Islands in late 1960's (Coulter and Risebrough 1973) and to a less extent in 1992 (Fry 1994).

Ecological Requirements

Does not excavate burrows, and usually breeds in crevices of talus slopes, rock walls, sea caves,

cliffs, and driftwood, habitats that are often structurally unstable (James-Veitch 1970, Carter et al. 1992, Ainley 1995, McIver 2002). At times, breeds in burrows or crevices in close proximity to other seabird species (e.g., Barlow 1894). Diet of Ashy Storm-Petrels has not been extensively studied, but includes euphausiids, other crustaceans, unidentified fish, and squid (Ainley 1995).

Threats

Susceptible to a variety of threats, which include: a) degradation of breeding habitats by humans and introduced livestock; b) depredation by introduced mammalian predators, especially rats and cats; c) poor breeding success due to contaminants; d) depredation by heightened levels of owls and gulls or enhanced mortality from artificial lights on the colony or on boats near the colony; e) disturbance from human activities at breeding colonies can cause site abandonment (e.g., egg collecting, research handling of incubating adults); and f) mortality from oil pollution. At Santa Cruz Island, careless stepping by tourists exploring sea caves will likely destroy fragile breeding habitats among rocks and driftwood, and potentially kill storm-petrel adults, chicks, and eggs during the breeding season. Breeding sites located in loose rocks on offshore islands are also susceptible to destruction from careless human stepping. Oil pollution likely kills some birds, although as yet no oiled storm-petrels have been recovered after large oil spills in California. Ashy Storm-Petrels have been recovered dead on an at-sea oil platform and at mainland locations with bright lights in Santa Barbara and Ventura counties (Carter et al. 2000) and San Francisco Bay (Ainley et al. 1990). In the Channel Islands, squid fishing boats operating close to islands cause extensive colony illumination at night which likely leads to site abandonment and high levels of depredation. The squid fishery has increased dramatically in the 1990's (Vojkovich

1998) with fishing areas shifting to near major Ashy Storm-Petrel colonies at Santa Barbara, Santa Cruz, San Miguel, and Anacapa islands during the breeding season in some years.

Management and Research Recommendations

Breeding colonies in accessible locations should be off limits to the general public. At the South Farallon Islands, breeding sites are well protected within the Farallon National Wildlife Refuge and managed by the U. S. Fish and Wildlife Service. Breeding locations protected within Channel Islands National Park, Point Reyes National Seashore, California Islands National Monument, and at San Clemente Island require additional restrictions and enforcement by the National Park Service, Bureau of Land Management, California Department of Fish and Game, and U.S. Navy to ensure that humans do not access breeding habitats. Sea caves at Santa Cruz Island (on land managed by the National Park Service and Nature Conservancy), which contain high numbers and densities of breeding sites, should be closed year round to human access to protect birds and breeding habitats (McIver 2002; McChesney et al., *in prep.*). These sea caves are advertised as tourist attractions for kayakers and guide books for their access have been produced. Efforts to educate kayakers and other tourists are needed, along with enforcement of cave closures. Bright boat lights that cause colony illumination should be prohibited near colonies in the Channel Islands throughout the year.

Populations should be monitored in a standardized manner (i.e., carefully measuring breeding success at sites, examining changes in numbers of mist-net captures, and examining levels of depredation at colonies) to examine population trends. Long-term monitoring of reproductive success is currently conducted only at the South Farallon Islands but also should be conducted in the Channel Islands. Additional research on the use of mist-net captures to monitor storm-petrel populations and estimate population size is needed. Searches for small overlooked

colonies along the central and northern California coasts from Point Conception to Cape Mendocino should be conducted to ensure colony protections. Population impacts from depredation, contaminants, human disturbance, squid boat lights, and other boat lights should continue to be investigated. Diet studies are needed to better assess certain threats (e.g., contaminants, prey changes).

Using settlement funds related to the *American Trader* oil spill, federal and state trustee agencies have sponsored a major rat eradication project at Anacapa Island in 2001-2002 (ATTC 2001) which should eventually result in the restoration of a much larger colony of Ashy Storm-Petrels, Xantus's Murrelets, and other small seabirds, given abundant suitable but unused breeding habitat (McChesney et al. 2000a, Hamer and Carter 2002). Efforts to reduce depredation and restore breeding habitats at the South Farallon Islands are needed.

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